IN THE CLAIMS:

Please cancel claims 1-27 without prejudice.

Please add new claims 28-54 as follows:

1-27. Cancelled.

28. (New) A method of processing a signal in radio system, the method comprising:

receiving a signal in a mobile system receiver,

performing an analogue-to-digital conversion on the received signal so as to provide signal samples,

the method further comprising

selecting a set of signal samples,

fitting the samples in the set of signal samples into a statistical distribution,

removing such signal samples, which fall outside the statistical distribution of the set of signal samples, when using a statistical function threshold value of the statistical distribution as a limit;

repeating the fitting of signal samples in the set of signal samples into a statistical distribution and the removing of signal samples from the set of signal samples until a predetermined condition for the repetition is fulfilled; and

using the obtained sample set for signal detection.

29. (New) A method as claimed in claim 28, further comprising:

storing the set of signal samples,

converting the stored set of signal samples into a frequency domain;

converting the set of signal samples into a time domain when the predetermined condition for the repetition is fulfilled.

30. (New) A method as claimed in claim 28, wherein in the method interference is removed from the received signal without knowledge of the interfering signal.

31. (New) A method as claimed in claim 28, wherein a criterion for removing signal samples from the set of signal samples is determined by an excised portion of the Rayleigh distribution and the mean of the distribution of the noise-free signal.

32. (New) A method as claimed in claim 28, wherein the signal sample set is selected such that it covers a symbol length in the transmitted signal.

33. (New) A method as claimed in claim 28, comprising:

forming an average of magnitude or a magnitude spectrum for the samples in the set of signal samples, and

using the average of magnitude or a magnitude spectrum as a criterion when deciding whether signal samples are to be removed from the set of signal samples.

34. (New) A method as claimed in claim 28, wherein the predetermined condition is induced from the signal within distribution being Gaussian-distributed on reception.

35. (New) A method as claimed in claim 28, wherein the predetermined condition used is that a given number of repetition rounds is fulfilled.

36. (New) A method as claimed in claim 28, wherein the predetermined condition used is that there are no samples to remove from the set of signal samples.

37. (New) A method as claimed in claim 28, wherein in the method narrowband interference is removed from a broadband signal.

38. (New) A method as claimed in claim 28, wherein in the method broadband interference is extracted from a narrowband signal.

39. (New) A method as claimed in claim 28, wherein either samples representing a narrowband signal component of samples representing a broadband signal component are fitted into the statistical distribution.

40. (New) A method as claimed in claim 28, wherein the samples in the signal sample set are zeroed after the repetition is finished.

41. (New) A method as claimed in claim 28, wherein absolute values of the signal sample values are used for the samples in the set of signal samples when fitting the samples into the statistical distribution.

42. (New) A method as claimed in claim 1, wherein squares of the absolute values of the signal sample values are used for the samples in the set of signal samples when fitting the samples into the statistical distribution.

43. (New) A receiver in a radio system, the receiver comprising:

means for receiving a signal,

an analogue-to-digital converter for providing signal samples from the received signal,

wherein the receiver comprises

means for selecting a set of signal samples,

means for modifying the selected signal sample set so as to form a set in accordance with the distribution,

means for forming a statistical function value on the basis of the signal sample values of the set in accordance with the distribution,

means for forming a threshold value on the basis of the statistical function value and a preset threshold parameter,

means for dividing the samples between the set in accordance with the distribution and a set outside distribution by using the threshold value as a limit,

means for repeating said statistical function value formation by using the sample set in accordance with the distribution, said threshold value formation and said division of the samples into said sets if a termination condition for the repetition is not fulfilled, and

means, after fulfilment of the termination condition, for setting to a set value such samples from the selected signal sample set that belong to one of the following sets: the set in accordance with the distribution and the set outside distribution.

44. (New) A receiver in a radio system, the receiver comprising:

a receiving unit configured to receive a signal,

an analogue-to-digital converter configured to provide signal samples from the received signal,

wherein the receiver comprises

a selecting unit configured to select a set of signal samples,

a converting unit configured to convert the selected signal sample set to the frequency domain,

a modifying unit configured to modify the selected signal sample set so as to form a set in accordance with a distribution,

a first forming unit configured to form a statistical function value on the basis of the selected signal samples,

a second forming unit configured to form a statistical function value on the basis of the signal sample values of the set in accordance with the distribution,

a third forming unit configured to form a threshold value on the basis of the statistical function value and a preset threshold parameter,

a dividing unit configured to divide the samples of the set in accordance with the distribution between the set in accordance with the distribution and a set outside distribution by using the threshold value as a limit,

a checking unit configured to check the termination condition,

a repeating unit configured to repeat said statistical function value formation by using the sample set in accordance with the distribution, said threshold value formation and said division of the samples into said sets if a termination condition for the repetition is not fulfilled, and

a setting unit, after fulfilment of the termination condition, configured to set to a set value such samples from the selected signal sample set that belong to one of the set in accordance with the distribution and the set outside distribution, and

a converting unit configured to convert the set comprising the selected signal samples by an inverse transformation of the transformation method employed back to the time domain.

45. (New) A receiver as claimed in claim 44, wherein the preset threshold parameter has been determined based upon an excised portion of the Rayleigh distribution and the average of the distribution of the noise-free signal.

46. (New) A receiver as claimed in claim 44, wherein the means the selecting unit is arranged to select the sample set such that it covers a symbol length in the transmitted signal.

47. (New) A receiver as claimed in claim 44, wherein the forming unit is configured to form the average of magnitude or magnitude spectrum as the statistical function value.

48. (New) A receiver as claimed in claim 44, wherein the repeating unit is configured to use as the termination condition the fact that the signal within distribution is Gaussian-distributed on reception.

49. (New) A receiver as claimed in claim 44, wherein the repeating unit is configured to use as the termination condition the fact that a given number of iteration rounds is fulfilled, each round comprising the formation of a statistical function value, the formation of a threshold value and the division of samples into the sample sets.

50. (New) A receiver as claimed in claim 44, wherein the repeating unit is configured to use as the termination condition the fact that in the sample division into the sample sets, all the samples remain in their sample sets.

51. (New) A receiver as claimed in claim 44, wherein the receiver is configured to remove narrowband interference from a broadband signal.

52. (New) A receiver as claimed in claim 44, wherein the receiver is configured to remove broadband interference from a narrowband signal.

53. (New) A receiver as claimed in claim 44, wherein the means for setting to the set value comprised by the receiver are configured to set the samples of the selected signal sample set to the threshold value.

54. (New) A receiver as claimed in claim 44, wherein the setting unit is configured to set the samples of the selected signal sample set to zero.